

CHAPTER 11

Program Management Activities

11.0. Overview

11.0.1. Purpose

The purpose of this chapter is to describe and explain some of the activities and decisions available to and required of the program manager as he or she manages and executes the program.

11.0.2. Contents

Chapter 11 covers the following topics:

- Joint Programs
- International Cooperation
- Integrated Program Management
- Earned Value Management
- Contract Management Reporting
- Risk Management
- Knowledge-Based Acquisition
- Performance-Based Business Environment
- Total Life Cycle Systems Management
- Integrated Product and Process Development
- Technical Representatives at Contractor Facilities
- Contractor Councils
- Government Property in the Possession of Contractors
- Integrated Digital Environment
- Simulation-Based Acquisition and Modeling and Simulation
- Independent Expert Review of Software-Intensive Programs

Additional information regarding Program Management can be found at the Acquisition Community Connection (ACC) Program Management Community of Practice web site.

11.1. Joint Programs

There are two aspects of "jointness" to consider when discussing joint program management: the jointness of the capability and the jointness of the development and production of the system.

11.1.1. Acquiring Joint Capabilities

As part of the Joint Capabilities Integration and Development System, the Joint Staff J-8, with the assistance of US Joint Forces Command and additional Joint Staff resources, evaluates all Joint Capabilities Integration and Development System documents, regardless of Acquisition Category or previous delegation decisions or Joint Planning Document decisions, to determine whether the proposal has joint force implications.

Section 1.3 provides a brief overview of the Joint Capabilities Integration and Development System. The Joint Staff documents, CJCSI 3170.01 and CJCSM 3170.01, provide full detail and direction on this topic.

11.1.2. Joint Acquisition Management

Acquisitions that contribute to joint capabilities may be managed as joint acquisition programs. A “joint acquisition” is any acquisition system, subsystem, component, or technology program with a strategy that includes funding by more than one DoD Component during any phase of a system's life cycle. DoD Instruction 5000.2 addresses DoD Component fiscal responsibilities associated with participation in programs under joint acquisition management.

11.1.2.1. Designation

Considering the assigned Joint Potential Designator and the recommendation of the Heads of the DoD Components, the Milestone Decision Authority decides whether to place the program under joint acquisition management. The Milestone Decision Authority should make this decision and, if appropriate, designate the Lead Executive DoD Component, as early as possible in the acquisition process.

The DoD Components should periodically review their programs to determine the potential for joint cooperation. The DoD Components should structure program strategies to encourage and to provide an opportunity for multi-Component participation.

11.1.2.2. Execution

The designated Lead Executive DoD Component for a joint acquisition should act on behalf of all DoD Components involved in the acquisition.

A Memorandum of Agreement should specify the relationship and respective responsibilities of the Lead Executive DoD Component and the other participating components. The Memorandum of Agreement should address system capabilities and the development of capabilities documents, funding, manpower, and the approval process for other program documentation.

The following additional considerations have proven effective in managing joint programs:

- The assignment of a Lead Executive DoD Component should consider the demonstrated best business practices of the DoD Components, including plans for effective, economical, and efficient management of the joint program; and the demonstrated willingness of the DoD Component to fund the core program, essential to meeting joint program needs.
- The Milestone Decision Authority and DoD Components should consolidate and co-locate the supporting efforts of the joint program at the Lead Executive DoD Component's program office, to the maximum extent practicable.

- The Component Acquisition Executive of the Lead Executive DoD Component should optimally use the acquisition organizations, test organizations, and other facilities of all Military Departments.
- The designated Lead Executive DoD Component selects the qualified program manager for the designated program under joint acquisition. The single program manager should then be fully responsible and accountable for the cost, schedule, and performance of the development system.
- If the joint program results from a consolidation of several different DoD Component programs, each with a separate program manager, the selected joint program manager should have the necessary responsibility and authority to effectively manage the overall system development and integration.
- A designated program under joint acquisition should have one quality assurance program, one program change control program, one integrated test program, and one set of documentation and reports (specifically: one set of capabilities documents, one Information Support Plan, one Test and Evaluation Master Plan, one Acquisition Program Baseline, etc.).
- The Milestone Decision Authority should designate the lead Operational Test Agency to coordinate all operational test and evaluation. The lead Operational Test Agency should produce a single operational effectiveness and suitability report for the program.
- Documentation for decision points and periodic reporting should flow only through the Lead Executive DoD Component acquisition chain, supported by the participating components.
- The program should use inter-DoD Component logistics support to the maximum extent practicable, consistent with effective support to the operational forces and efficient use of DoD resources.
- Unless statute, the Milestone Decision Authority, or a memorandum of agreement signed by all DoD Components directs otherwise, the Lead Executive DoD Component should budget for and manage the common Research, Development, Test, and Evaluation funds for the assigned joint program.
- Individual DoD Components should budget for their unique requirements.

11.2. Considerations for International Cooperation

11.2.1. International Cooperative Programs

An international cooperative program is any acquisition system, subsystem, component, or technology program with an acquisition strategy that includes participation by one or more foreign nations, through an international agreement, during any phase of a system's life cycle. The key objectives of international cooperative programs are to reduce weapons system acquisition costs through cooperative development, production, and support; and to enhance interoperability with coalition partners.

11.2.1.1. International Considerations and Program Strategy

Title 10 U.S.C. 2350a(e) requires an analysis of potential opportunities for international cooperation for all Acquisition Category I programs. DoD Directive 5000.1 and DoD Instruction 5000.2 specify the requirements for international considerations; amplifying guidance and information appears in this Guidebook. DoD Directive 5000.1 requires International Armaments Cooperation; requires interoperability with U.S. coalition partners; and establishes the preference for a cooperative development program with one or more Allied nations.

During the development of the initial acquisition strategy for a new program, the potential for international cooperative research, development, production, and logistic support should be addressed, and thereafter, the potential for international cooperation should be considered in every phase of the acquisition process. DoD Components should periodically review their programs to determine the potential for international cooperation. Milestone Decision Authorities may recommend forming international cooperative programs based on the international program acquisition strategy considerations; DoD Component Heads may also recommend forming international cooperative programs. The Milestone Decision Authority should make the decision to establish an international cooperative program as early as possible in the acquisition process.

The Milestone Decision Authority, with the advice and counsel of the DoD Components and the Joint Requirements Oversight Council, makes the decision to pursue an international cooperative program. The decision process should consider the following:

Demonstrated best business practices, including a plan for effective, economical, and efficient management of the international cooperative program;

Demonstrated DoD Component willingness to fully fund their share of international cooperative program needs;

The long-term interoperability and political-military benefits that may accrue from international cooperation; and

The international program's management structure documented in the international agreement. The designated program manager (U.S. or foreign) is fully responsible and accountable for the cost, schedule, and performance of the resulting system.

The DoD Component remains responsible for preparation and approval of most statutory, regulatory, and contracting reports and milestone requirements, as listed in DoD Instruction 5000.2. Documentation for decision reviews and periodic reports flow through the DoD Component acquisition chain, supported by the participating nation(s).

International cooperation can add stability to the program. DoD Instruction 5000.2 prevents DoD Components from terminating or reducing participation in some international cooperative programs without Milestone Decision Authority notification, and in some cases, Milestone Decision Authority approval.

Additional information may be found in the OSD/IC International Armaments Cooperation Handbook.

11.2.1.2. International Considerations within the Acquisition Management Framework

Department of Defense policy promotes international cooperative acquisition, technology and logistics activities, especially with allies and friends, that will enable the warfighter to be well prepared and supported for coalition operations. (USD(AT&L) Memorandum, International Cooperation in Acquisition, Technology and Logistics, April 27, 2004)

International programs may be established at any point in the DoD Instruction 5000.2 defense acquisition management framework, when justified as a prudent business judgment. Figure 11.2.1.2.1. depicts the key considerations for each phase:

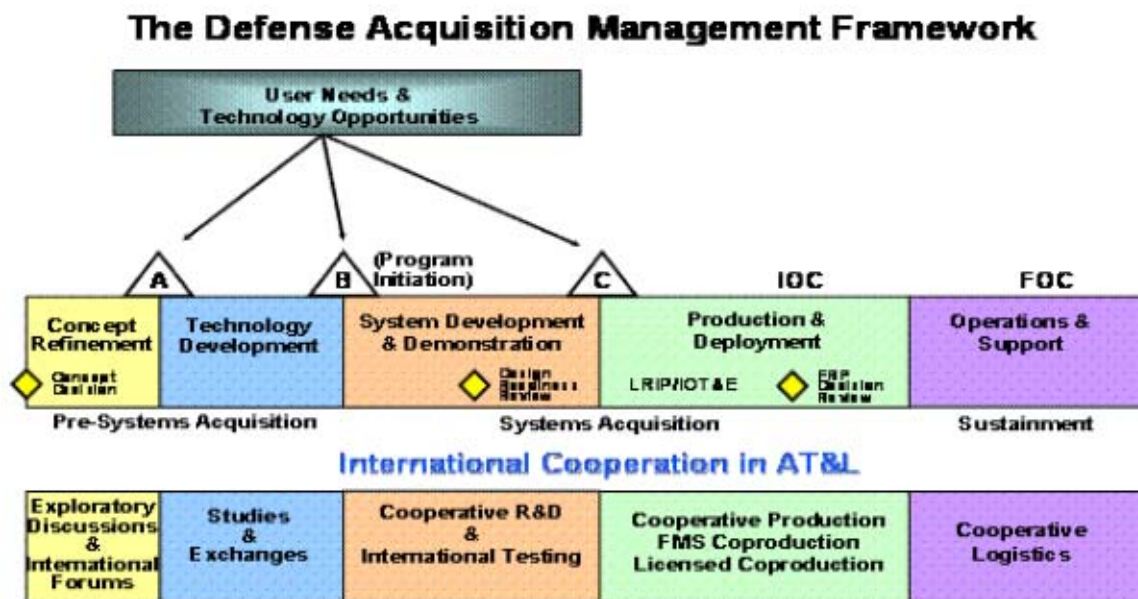


Figure 11.2.1.2.1. Key International Cooperative considerations during Acquisition.

Determination of User Needs & Exploring Technology Opportunities (Early Technology Projects). The efforts needed to identify cooperative development opportunities before entering into a formal acquisition program are often challenging, but such activities capitalize on high payoffs in cost savings and interoperability when successful. Formulation of cooperative development programs involves resolution of issues in the areas of requirements harmonization, cost sharing, work sharing, technology transfer, intellectual property rights, and many others. While multinational force compatibility may increase system acquisition cost, it can provide more cost-effective defense for the whole force through increased interoperability and reduced life-cycle costs. Cooperative opportunities identification and formulation should be pursued during the earliest stages of the pre-systems acquisition research and development process to maximize the chance for success. This includes during Advanced Technology Demonstrations, Joint Warfighting Experiments, Advanced Concept and Technology Demonstrations, Concept Refinement, and Technology Development.

Using the Joint Capabilities Integration and Development System process, representatives from multiple DoD communities formulate broad, time-phased, operational goals, and describe requisite capabilities in the Initial Capabilities Document. They examine multiple concepts and materiel approaches to optimize the way the Department of Defense provides these capabilities. This examination includes robust analyses that consider affordability, technology maturity, and responsiveness.

Several important mechanisms available to provide insight into the needs of potential foreign partners are exploratory discussions, international forums, studies, and the exchanges of information and personnel:

Exploratory Discussions. Before entering into an international project, many forms of dialogue can take place with potential partners. These informal discussions are usually called exploratory discussions or technical discussions--they are NOT called "negotiations," which requires a legal authority and formal permission from the Office of the Secretary of Defense. The avoidance of any binding commitments on the part of the U.S. Government, and the absence of any draft, international agreements characterize exploratory discussions. Other than the two exclusions above, the parties may discuss most other topics, provided release authority has been obtained for any information provided by DoD representatives or defense contractors.

International Forums. There are many international forums dedicated to discussing mutual armaments needs and early technology projects. These forums include the Conference of National Armaments Directors (CNAD), whose U.S. representative is the USD(AT&L). The CNAD's subsidiaries are the "Main Armaments Groups," particularly the NATO Army Armaments Group (NAAG), NATO Navy Armaments Group (NNAG), and the NATO Air Force Armaments Group (NAFAG). The Technical Cooperation Program (TTCP) with Australia, Canada, New Zealand, and the United Kingdom is another multilateral forum dedicated to cooperation in conventional military technology development. In addition there are a number of bilateral forums, such as the U.S.-Japan Systems and Technology Forum and the U.S./Canadian Armaments Cooperation Management Committee that have a similar purpose.

Studies. It is normal for the DoD and potential partners to conduct studies before entering into a cooperative acquisition project. These studies can be conducted years before the project starts, and are often called feasibility studies, or pre-feasibility studies. Industry, government agencies, or a combination of both generally conduct the feasibility studies, with the objective of providing a technical appraisal of the feasibility of developing and producing equipment. These studies can develop input for the Analysis of Alternatives required by DoD before the start of a new acquisition program.

International Exchanges of Information and Personnel. A common source for cooperative program opportunity identification is the Defense Research, Development, Test and Evaluation Information Exchange Program (IEP), which provides a standardized way of conducting bilateral science and technology information exchange (formerly called data exchange). The IEP has proven extremely useful as a means of cooperative opportunities formulation. Another source for identifying cooperative opportunities is the Engineer and Scientist Exchange Program (ESEP).

Pre-Systems Acquisition. Decisions made during the Concept Refinement and Technology Development phases of Pre-Systems Acquisition generally define the nature of the entire program. Once the program enters the System Development and Demonstration phase, it is

difficult to adopt major changes without significant schedule or cost adjustments. Consequently, the decision to include international partners needs to be addressed as early as possible, preferably during development of the Initial Capabilities Document, but no later than during the Concept Refinement phase.

To meet the requirements of 10 U.S.C. 2350a (e), the acquisition strategy for an Acquisition Category I program must address the following areas:

- a) Is a similar project in development or production by NATO, a NATO organization, a member nation of NATO, a major non-NATO ally, or friendly foreign country?
- b) If so, the acquisition strategy provides an assessment of that project as to whether or not it could satisfy or be modified to satisfy U.S. military requirements.
- c) An assessment of the advantages and disadvantages with regard to program timing, developmental and life cycle costs, technology sharing, and Rationalization, Standardization, Interoperability (RSI) of a cooperative development program.
- d) Provide a specific recommendation whether or not a cooperative program should be explored.
- e) What alternate forms of cooperation could be appropriate for the project?

Except for e) above, these considerations are based on 10 U.S.C. 2350a requirements. They force the consideration of alternative forms of international cooperation. Even if cooperative development is impractical, cooperative production, foreign military sales, licensed production, component/subcomponent co-development, or incorporation of subsystems from allied or friendly foreign sources should be considered and may be appropriate.

DoD Components should fully investigate potential cooperative opportunities as part of the acquisition strategy development. Program proponents should consult with the appropriate international programs organization to obtain assistance in addressing international considerations during acquisition strategy development for programs in all acquisition categories.

System Development and Demonstration Phase. After program initiation, during System Development and Demonstration, key elements of the system design are defined, and system/subsystem development begins. Major changes often present schedule delays that program managers are unwilling to accept; however, there have been numerous examples of successful subsystem cooperative development partnerships that have been formed during the System Development and Demonstration Phase. Once a program has reached this phase, absent cooperation in earlier stages, there will be only limited opportunity to bring other nations on as full cooperative development partners. Consequently, if the opportunity for cooperation in subsystem development arises prior to or during System Development and Demonstration, consult with the appropriate international programs organization to obtain further assistance.

Foreign Comparative Testing. A viable alternative to development is the acquisition of commercial items. While individual acquisition programs can conduct evaluations with their own resources, the Foreign Comparative Testing (FCT) Program offers a structured and funded means for program offices to evaluate the suitability of a foreign developed item for purchase in lieu of developing a similar U.S. item.

International Test Operations Procedures. The International Test Operations Procedures (ITOP) program provides for international agreements that document state-of-the-art test techniques for technical testing of military material and allows the exchange of test data to avoid redundant testing when foreign equipment is purchased. Currently there are over 130 ITOPs with Germany, France, and the UK covering a variety of test types and/or equipment class. Through ITOPs, the U.S. has access to latest test technology and procedures of our allies, which could possibly be utilized by DoD program managers. The ITOP program is managed at OSD by the Office of the Director, Operational Test and Evaluation (DOT&E).

Production and Deployment Phase. There are three basic mechanisms for transfer of U.S. produced defense articles and associated production capability to other nations. The first two, (1) Foreign purchase and (2) Foreign co-production of a U.S. developed system, fall under the purview of the Defense Security Cooperation Agency (DSCA). The Department of State is responsible for transfer of defense articles and associated production capability under export licenses. Both DSCA and the Defense Technology Security Administration coordinate closely with the cognizant DoD Component regarding the development and implementation of DoD co-production policy in their respective areas of responsibility. USD(AT&L) is responsible for oversight of the third basic mechanism, (3) Cooperative production. Cooperative production is a joint or concurrent international production arrangement arising from a cooperative development project. Examples of this type of production program are the Rolling Airframe Missile (RAM) and the Multi-Functional Information Distribution System (MIDS). Cooperative production falls under the authority of the Arms Export Control Act (AECA) Section 2751.

Operations & Support Phase. Cooperative logistics refers to cooperation between the U.S. and allied or friendly nations or international organizations in the logistical support of defense systems and equipment. Cooperative logistics is part of the acquisition process, but as a substantial part of military operations, much of the implementation process involves Security Assistance processes and procedures.

Cooperative logistics support includes:

- Logistics Cooperation international agreements (IAs), used to improve sharing of logistics support information and standards, and to monitor accomplishment of specific cooperative logistics programs;
- Acquisition and Cross-Servicing Agreements;
- Host Nation Support;
- Cooperative Logistics Supply Support Arrangements;
- Cooperative Military Airlift Agreements;
- War Reserve Stocks for Allies;
- Agreements for acceptance and use of real property or services;
- Standardization of procedures under America/Britain/Canada/Australia/New Zealand auspices;
- International Standardization Agreements developed in conjunction with member nations of the North Atlantic Treaty Organization and other allies and coalition partners, as described in DoD 4120.24-M, Defense Standardization Program (DSP) Policies and Procedures and as listed in the ASSIST database;
- Consideration of the interoperability implications of these agreements when constructing Work Breakdown Structures; and
- Planning support provide by the Program Manager's Tool.

Each participant or party involved in cooperative logistics agreements should benefit from the agreement. Benefits could be tangible, such as the U.S. receiving support for its naval vessels when in a foreign port; or intangible, such as the foreign nation receiving the implied benefit of a visible, U.S. naval presence in the region. Other cases are more obviously quid-pro-quo: cross-servicing agreements, for example. In a cross servicing agreement, each party receives the equivalent of the materiel or services provided to the other party. Besides the obvious material benefits, such agreements have the collateral effects of opening dialog and creating relationships between the parties. Such dialog and relationships may serve to strengthen political bonds. While not a program manager responsibility, DoD acquisition personnel should be aware of the international consequences of their activities and appropriately support such efforts.

11.2.1.3. International Cooperative Program Protection

Program protection considerations play a major role in international cooperative programs for obvious reasons. The program manager should consider technology security factors when developing an international cooperative program. The Defense Technology Security Administration, in concert with DoD Component technology security organizations, is the focal point within the DoD for technology security. Program managers should contact their DoD Component technology security organization early enough in the process to ensure that technology security factors that may affect cooperative efforts are taken into consideration.

The program manager should consider technology release in the initial planning of an international cooperative program through a review of National Disclosure Policy foreign disclosure guidance and development of the foreign disclosure and export control elements of the program's Technology Assessment/Control Plan. Early consideration of National Disclosure Policy requirements and foreign disclosure/export control planning in an international cooperative program should enable the international program to avoid major cost, schedule, and performance goal impacts.

DoD Instruction 5000.2, paragraphs 3.4.2, 3.7.1, and Table E3.T2., establish international cooperative program protection policy. Chapter 8 of this Guidebook provides additional insights into this policy.

11.2.1.3.1. Classification Guide

In addition to the Program Protection Plan required by all programs containing Critical Program Information, DoD Directive 5200.1 requires international programs to develop a classification guide for all programs containing classified information of either party. The classification guide identifies the items or information to be protected in the Program, and indicates the specific classification to be assigned to each item.

11.2.1.3.2. Program Security Instruction (PSI)

A Program Security Instruction (PSI) details security arrangements for the program and harmonizes the requirements of the Participants' national laws and regulations. Using the USD(AT&L) international agreements streamlined procedures authorized by DoD Instruction 5000.2, the International Agreements Generator will lead the program manager through the considerations for, and the development of, a PSI. Additional information about the PSI is found in the International Armaments Cooperation Handbook.

If all security arrangements to be used in an international program are in accordance with an existing industrial security arrangement between the Participants, a separate PSI is not required.

11.2.1.3.3. Delegation of Disclosure Authority Letter (DDL)

Per DoD Instruction 5000.2, a written authorization to disclose any classified or controlled unclassified information must be obtained prior to entering discussions with potential foreign partners. The authorization for release of classified information (developed or used during any part of the lifecycle of the program) to any potential or actual foreign participants in the program will be in the form of a Delegation of Disclosure Authority Letter (DDL) (DoD Directive 5230.11) or other written authorization issued by the DoD Component Foreign Disclosure Office. The authorization for release of classified or controlled unclassified information must comply with DoD Component policies for release of such information.

11.2.1.3.4. Technology Release Roadmap (TRR)

Prior to the System Design and Demonstration phase of an acquisition program with substantial international involvement by foreign industry, the program manager should prepare an export control TRR as part of their Technology Assessment/Control Plan. This TRR will project when export licenses will be required in support of the acquisition process, and when critical milestones regarding national disclosure policy implementation will need to be addressed. The TRR must be consistent with the program's Technology Assessment /Control Plan (TA/CP), security classification guide, and other disclosure guidance....such as National Disclosure Policy, Low Observable/Counter Low Observable EXCOM, and National Security Agency policy.

The TRR accomplishes the following:

- Provides early DoD Component planning for the program's proposed technology releases to foreign industry consistent with the National Disclosure Policy.
- Provides early planning for higher-level (i.e., above DoD Component-level) special technical reviews and approvals (i.e. Low Observable/Counter Low Observable, anti-tamper, cryptography) needed in support of proposed technology releases to foreign industry.
- Establishes a detailed export license approval planning process for U.S.-foreign industry cooperation to meet critical program and contract timelines.

The TRR includes three sections: 1) A timeline mapping key projected export licenses against the program acquisition schedule; 2) A definition of the technologies involved in each export license; and 3) A list of U.S. contractors (exporters) as well as foreign contractors (end users) for each license.

11.2.2. OUSD(AT&L)-Related International Agreement Procedures

An International Agreement (IA) is any agreement concluded with one or more foreign governments including their agencies, instrumentalities, or political subdivisions, or with an international organization. The IA delineates respective responsibilities and is binding under international law. IAs are required by U.S. law for all international cooperative projects.

Per DoD Instruction 5000.2, all AT&L-related international agreements may use the USD(AT&L)-issued streamlined procedures found in this Guidebook and in the International Armaments Cooperation Handbook, rather than following the lengthy documentation requirements mandated by DoD Directive 5530.3, International Agreements.

11.2.2.1. Preparation and Documentation

The following considerations apply to the preparation of and documentation associated with AT&L-related international agreements:

- Program managers or project leaders consult with the DoD Component's international programs organization, as well as foreign disclosure, legal, and comptroller personnel, to develop international agreements.
- The DoD Components develop international agreements in accordance with the provisions of the most recent version of DoD International Agreement Generator computer software.
- Prior to initiating formal international agreement negotiations, the DoD Components prepare a Request for Authority to Develop and Negotiate (RAD) that consists of a cover document requesting such authority and a Summary Statement of Intent (SSOI) that describes the DoD Component's proposed approach to negotiations.
- Prior to signing an international agreement, the DoD Components prepare a Request for Final Approval (RFA) that consists of a cover document requesting such authority, a revised SSOI that describes the outcome of negotiations, and the full text of the international agreement to be signed on behalf of the Department of Defense.
- The DoD Components use the Coordination Process described in section 11.2.2.3.2. for both the Request for Authority to Develop and Negotiate and the Request for Final Approval.

11.2.2.2. OUSD(AT&L) Oversight

OUSD(AT&L)/International Cooperation (IC) provides the following international agreement oversight support:

- Approves and makes available the following agreement process guidance:
 - Request for Authority to Develop (RAD);
 - Request for Final Approval (RFA);
 - Summary Statement of Intent (SSOI);
 - Arms Export Control Act Section 27 Project Certification format requirements; and
 - DoD International Agreement Generator computer software.
- Approves the following agreement process actions:
 - RADs and RFAs for Memoranda of Understanding (MOU)/Memoranda of Agreement (MOA);
 - Project Agreements and Arrangements (PAs);
 - Arms Export Control Act Section 65 Loan Agreements;
 - End-User Certificate (EUC) Waivers (See DoD Directive 2040.3.);
 - The Foreign Military Sales of items which have not completed operational test and evaluation successfully (Yockey Waivers); and
 - DoD Component requests for DoD International Agreement Generator text deviations or waivers requested in RAD and RFA submissions.
- Delegates PA negotiation authority under the Streamlining I approval process to specifically designated DoD Components.

- Certifies DoD Component international agreement processes to the Streamlining II standards prior to delegation of RAD/RFA authority to a DoD Component.
- Decertifies a DoD Component international agreement process in the event minimum quality standards are not maintained.
- Resolves RAD/RFA coordination process disputes.
- Supports satisfaction of the following statutory requirements:
 - Obtains USD(AT&L) determination under 10 U.S.C. 2350a(b) for all international agreements that rely upon this statute as their legal authority;
 - Notifies Congress of all Arms Export Control Act Section 27 (see 22 U.S.C. Section 2767, "Authority of President to enter into cooperative projects with friendly foreign countries") international agreements a minimum of 30 calendar days prior to authorizing agreement signature; and
 - Conducts interagency coordination with the Department of State, Department of Commerce, and the Department of the Treasury (see 22 U.S.C. 2767 and DoD Directive 5530.3).

11.2.2.3. Coordination Processes

There are two accredited international agreement coordination processes: Streamlining I and Streamlining II.

11.2.2.3.1. International Agreement Streamlining I Process

OUSD(AT&L)/IC uses the following Streamlining I process unless it has delegated coordination authority to the DoD Component:

Request for Authority to Develop and Negotiate (RAD) MOUs and MOAs. The DoD Component prepares the RAD and obtains OUSD(AT&L)/IC approval prior to initiating MOU or MOA negotiations. If applicable, the DoD Component develops and submits Coalition Warfare (CW) Initiative funding requests associated with the RAD, in accordance with the CW Management Plan. OUSD(AT&L)/IC conducts DoD and interagency coordination, as appropriate, using a standard review period of 21 working days, which may expedited at OUSD(AT&L)/IC's discretion.

Request for Authority to Develop and Negotiate (RAD) PAs and Section 65 Loan Agreements. Unless OUSD(AT&L)/IC delegates PA negotiation authority, the DoD Component prepares a RAD and obtains OUSD(AT&L)/IC approval prior to initiating Program Authorization (PA) or Section 65 Loan Agreement negotiations. OUSD(AT&L)/IC conducts interagency coordination, as appropriate, using a standard review period of 15 working days, which may be expedited at OUSD(AT&L)/IC's discretion.

Negotiation. Generally, within 9 months of receipt of RAD authority, the DoD Component negotiates the international agreement in accordance with the provisions of the most recent version of DoD International Agreement Generator.

Request for Final Approval to Conclude (RFA) MOUs and MOAs. The DoD Component prepares the RFA and obtains OUSD(AT&L)/IC approval prior to signing the MOU or MOA. RFAs for agreements relying upon Arms Export Control Act (AECA) Section 27 of the Arms Export Control Act as the legal authority for the international agreement will also include a Project Certification. OUSD(AT&L)/IC conducts interagency coordination, as appropriate, based upon a standard review period of 21 working days, which may be expedited at

OUSD(AT&L)/IC's discretion. OUSD(AT&L)/IC provides Congress with any required AECA Section 27 notifications.

Request for Final Approval to Conclude (RFA) PAs and Section 65 Loan Agreements.

The DoD Component submits RFAs notifying OUSD(AT&L)/IC of its intention to sign PAs and Section 65 Loan Agreements prior to concluding such agreements. AT&L/IC conducts interagency coordination, as appropriate, based upon a review period of 15 working days, which may be expedited at OUSD(AT&L)/IC's discretion. OUSD(AT&L)/IC provides Congress with any required AECA Section 27 notifications.

11.2.2.3.2. International Agreement Streamlining II Process

OUSD(AT&L)/IC may delegate approval authority for the Request for Authority to Develop and Negotiate/Request for Final Approval (RAD/RFA) for all international agreements associated with programs with a total program value of less than \$25M (in FY01 constant dollars) and for Acquisition Category II and Acquisition Category III programs to the DoD Component Acquisition Executive. The DoD Component Acquisition Executive may subsequently re-delegate RAD/RFA authority for programs with a total program value of less than \$10M (in FY01 constant dollars) and Acquisition Category III programs to the Head of the DoD Component's international programs organization. The following procedures will apply:

The DoD Components will obtain the concurrence of their legal, financial management, and foreign disclosure organizations prior to approving RADs/RFAs.

The DoD Components will forward coordination disputes to OUSD(AT&L)/IC for resolution.

The DoD Components will send Notices of Intent to Negotiate (NINs) or Notices of Intent to Conclude (NICs) to OUSD(AT&L)/IC for all approved RADs and RFAs. NINs will include the DoD Component's approval document and program SSOI. NICs will also include the final international agreement text to be signed, plus an AECA Section 27 Project Certification, if required. The DoD Components will not sign international agreements until a 15-working-day period (for PAs and Loans) or 21-working-day period (for MOUs) after AT&L/IC receipt of the NIC has elapsed and any required 10 U.S.C. 2350a approval or Arms Export Control Act (AECA) Section 27 Congressional notification process has been completed.

OUSD(AT&L)/IC may, at its discretion, decide to waive these rules on a case-by-case basis and require that certain agreements receive specific OUSD(AT&L)/IC approval before conclusion.

OUSD(AT&L)/IC will use Notices of Intent to Negotiate (NINs), NICs and other relevant information to verify DoD Component international agreement process quality.

Generally, within 9 months of receipt of RAD authority, DoD Component personnel will negotiate the international agreement in accordance with the provisions of the most recent version of DoD International Agreement Generator.

11.2.3. Acquisition and Cross-Servicing Agreements (ACSA)

Acquisition and Cross-Servicing Agreements are bilateral international agreements that allow for the provision of cooperative logistics support under the authority granted in 10 U.S.C. Sections 2341-2350. They are governed by DoD Directive 2010.9, "Acquisition and Cross-Servicing Agreements" and implemented by CJCS Instruction 2120.01, "Acquisition and Cross-Servicing Agreements." ACSAs are intended to provide an alternative acquisition option for logistics support in support of exercises or exigencies.

11.2.3.1. Types of Acquisition and Cross-Servicing Agreements (ACSA) Authorities

Title 10 of the United States Code provides two legal authorities for foreign logistic support, supplies, and services: an Acquisition-only Authority, and a Cross-Servicing Authority, which includes an acquisition authority and a transfer authority.

Acquisition-Only Authority. 10 U.S.C. 2341, "Authority to acquire logistic support, supplies, and services for elements of the armed forces deployed outside the United States," authorizes elements of the U.S. Armed Forces, when deployed outside the United States, to acquire logistic support, supplies, and services from eligible foreign entities on a reimbursable basis. The authority is not reciprocal and does not require an approved ACSA in place. Acquisition-only authority may be used with the governments of NATO members, NATO and its subsidiary bodies, the United Nations Organization, any regional organization of which the United States is a member, and any other countries which meet one or more of the following criteria:

- Has a defense alliance with the United States;
- Permits the stationing of members of the armed forces in such country or the home porting of naval vessels of the United States in such country;
- Has agreed to preposition materiel of the United States in such country; or
- Serves as the host country to military exercises which include elements of the armed forces or permits other military operations by the armed forces in such country.

Cross-Servicing Authority. 10 U.S.C. 2342, "Cross-servicing agreements," authorizes the Department of Defense, upon coordination with the Secretary of State, to conclude reciprocal agreements with foreign countries and regional and international organizations for the provision of logistics, support, supplies and services. A current listing of these agreements and countries and organizations eligible to negotiate them is maintained by the Director for Logistics, The Joint Staff (J-4). DoD Directive 2010.9 provides the official process for nominating countries for eligibility for such agreements as well as for concluding them.

11.2.3.2. Permitted and Prohibited Uses of Acquisition and Cross-Servicing Agreements (ACSA)

ACSA is for the transfer of logistics, support, supplies, and services only. Per Section 4.5 of DoD Directive 2010.9, items that may not be acquired or transferred under ACSA authority include weapons systems; the initial quantities of replacement and spare parts for major end items of equipment covered by tables of organization and equipment, tables of allowances and distribution, or equivalent documents; and major end items of equipment. Specific items that may not be acquired or transferred under ACSA authority include guided missiles; naval mines and torpedoes; nuclear ammunition and included items such as warheads, warhead sections, projectiles, demolition munitions, and training ammunition; cartridge and propellant-actuated devices; chaff and chaff dispensers; guidance kits for bombs or other ammunition;

and chemical ammunition (other than riot control agents). General purpose vehicles and other items of non-lethal military equipment not designated as Significant Military Equipment on the United States Munitions List promulgated pursuant to 22 U.S.C. 2778, may be leased or loaned for temporary use. Specific questions on the applicability of certain items should be referred to the Combatant Command's legal office for review and approval.

11.2.3.3. Repayment of ACSA Obligations

In addition to the use of cash and subject to the agreement of the parties, ACSA obligations may be reconciled by either Replacement-in-Kind or Equal Value Exchange. ACSA obligations not repaid by Replacement-in-Kind or Equal Value Exchange automatically convert to cash obligations after one year.

Replacement in Kind (RIK). RIK allows the party receiving supplies or services under the ACSA to reconcile their obligation via the provision of supplies and services of an identical or substantially identical nature to the ones received. As an example, a country may provide extra water to the United States during a training exercise with the proviso that the United States will provide the same amount of water during a future exercise.

Equal Value Exchange (EVE). EVE enables the party receiving supplies or services under the ACSA to reconcile their obligation via the provision of supplies or services that are considered to by both parties to be of an equal value to those received. As an example, a country may provide extra water to the United States during a training exercise in exchange for the United States providing extra ammunition.

11.2.3.4. ACSA Implementation

DoD Directive 2010.9 and CJCS Instruction 2120.01 provide management guidance on initiating ACSA orders, receiving support, reconciling bills, and maintaining records. As this is a Combatant Command-managed program, organizations interested in acquiring logistics, support, supplies and services should work through the applicable logistics branch to receive further guidance on this topic.

11.2.4. Summary of International Cooperation Guidance and Resources

International cooperation offers the opportunity to achieve cost savings from the earliest phases of Pre-Systems Acquisition throughout the life cycle, while enhancing interoperability with coalition partners. All DoD acquisition personnel, in consultation with the appropriate international programs organizations, should strive to identify and pursue international cooperative programs in accordance with DoD 5000 policy. Specific topics are found in the OSD/IC International Armaments Cooperation Handbook at the OSD/IC website.

11.3. Integrated Program Management

The program manager should obtain integrated cost and schedule performance data to monitor program execution, and require contractors to use internal management control systems that accomplish the following (see DoD Instruction 5000.2):

- Produce data that indicate work progress;

- Properly relate cost, schedule, and technical accomplishment;
- Are valid, timely and able to be audited; and
- Provide DoD program managers with information at a practical level of summarization.

Unless waived by the Milestone Decision Authority, the program manager should require that contractors' management information systems used in planning and controlling contract performance meet the Earned Value Management Systems guidelines set forth in American National Standards Institute (ANSI)/EIA 748-98, Chapter 2. The program manager should not require a contractor to change its system, provided it meets these guidelines. The program manager should not impose a single system or specific method of management control.

11.3.1. Earned Value Management (EVM)

EVM is a key tool in the management and oversight of Major Defense Acquisition Programs. It is a management system that has evolved from combining both Government management requirements and Industry best practices. To access a variety of information related to EVM, go to the EVM Special Interest Area located on the Acquisition Community Connection (ACC) web site.

11.3.1.1. EVM Applicability

Earned Value Management Systems guidelines apply to contracts, subcontracts, other transaction agreements, and intra-government work agreements with a value of:

- \$73 million or more (in FY 2000 constant dollars) for research, development, test, and evaluation, or
- \$315 million or more (in FY 2000 constant dollars) for procurement or operations and maintenance.

The program manager should apply EVMS guidelines on applicable contracts within acquisition, upgrade, modification, or materiel maintenance programs, including highly sensitive classified programs, major construction programs, and other transaction agreements. EVMS guidelines apply to contracts executed with foreign governments, project work performed in government facilities, and contracts by specialized organizations such as the Defense Advanced Research Projects Agency.

A contract that does not require compliance with EVMS guidelines, but for which the DoD Component(s) requires more data than is available on the Cost/Schedule Status Report (C/SSR) may require a Cost Performance Report (CPR). CPR formats, level of detail, frequency, and variance analysis should be limited to the minimum necessary for effective management control.

The program manager may require compliance with EVMS guidelines or C/SSR requirements on firm fixed-price (FFP) contracts (including FFP contracts with economic price adjustment provisions), time and materials contracts, and contracts that consist mostly of level-of-effort work if cost and schedule visibility is deemed appropriate based on the level of risk to the government.

11.3.1.2. EVM Execution

The program manager should use DFARS clauses 252.234-7000 and 252.234-7001 to place EVMS requirements in solicitations and contracts.

Earned Value Management Systems guidelines should not be used as a basis for reimbursing costs or making progress payments.

11.3.2. Contract Management Reporting

The reports described in this section apply to all defense contracts. They help to ensure effective program management. The use of electronic media is preferred unless disclosure of this information would compromise national security. The Work Breakdown Structure used to prepare these reports should conform to the program Work Breakdown Structure. Except for high-cost or high-risk elements, the required level of reporting detail should not exceed level three of the contract Work Breakdown Structure.

11.3.2.1. Contractor Cost Data Reporting (CCDR)

CCDR is the primary means that the Department of Defense uses to collect data on the costs incurred by DoD contractors in performing DoD programs (Acquisition Category ID and IC). DoD Instruction 5000.2 makes CCDR mandatory. This data enables reasonable program cost estimates and satisfies other analytical requirements. The Chair, Cost Analysis Improvement Group (CAIG), ensures consistent and appropriate CCDR application throughout the Department of Defense by defining the format for submission of CCDRs and CCDR system policies, and by monitoring implementation.

CCDR coverage extends from Milestone B or equivalent to the completion of production in accordance with procedures described in this section. Unless waived by the Chair, CAIG, CCDR reporting is required on all major contracts and subcontracts that support Acquisition Category ID and IC programs, regardless of contract type, when the contracts are valued at more than \$50 million (FY 2002 constant dollars). CCDR reporting is not required for contracts priced below \$7 million. The CCDR requirement on high-risk or high-technical-interest contracts priced between \$7 and \$50 million is left to the discretion of the Cost Working-Level Integrated Product Team.

Exclusions . CCDR reporting is not required for procurement of commercial systems, or for non-commercial systems bought under competitively awarded, firm fixed-price contracts, as long as competitive conditions continue to exist.

Reporting . For Acquisition Category ID and IC programs, the program manager should use the IPPD process to develop the CCDR plan and forward it to the Chair, CAIG, for approval. CCDR plan approval should occur before issuing industry a solicitation for integration contracts. The CCDR plan reflects the proposed collection of cost data, by Work Breakdown Structure, for a program. The plan describes the report format to be used and the reporting frequency.

A cost-effective reporting system requires tailoring the CCDR plan and appropriately defining the program Work Breakdown Structure.

To support CCDR, each DoD Component designates, by title, an official who accomplishes the following:

- Ensures that policies and procedures are established for implementing CCDR, including CCDR data storage and distribution to appropriate DoD officials.
- Reviews all Acquisition Category I program CCDR plans and CCDR plan changes for compliance with CCDR guidance and the program Work Breakdown Structure, and forwards same to the CAIG.
- Advises the Chair, CAIG, annually, of the status of all CCDR programs, and addresses delinquent or deficient CCDR and its remedial action.

The Defense Cost and Resource Center periodically assesses the need for field reviews of contractor implementation of CCDR for Acquisition Category ID and IC programs. DoD Component Cost Centers assess the need for field reviews of less than Acquisition Category I programs.

The following general guidelines apply to all Acquisition Category ID, IC, II, and III programs. In general, the level of detail and frequency of reporting of Acquisition Category II and III programs is normally less than the level and frequency applied to Acquisition Category I programs:

- Level of Cost Reporting. Routine reporting is at the contract Work Breakdown Structure level three for prime contractors and key subcontractors. Only low-level elements that address high-risk, high-value, or high-technical-interest areas of a program require detailed reporting below level three. The Cost WIPT identifies these lower-level elements early in CCDR planning.
- Frequency. The Cost WIPT defines CCDR frequency for development and production contracts to meet the needs of the program for cost data early in CCDR planning. CCDRs are fundamentally a "returned" (or actual) cost reporting system. Contractors generally do not need to file cost data while work is still pending. Thus, for production contracts, contractors normally submit CCDR reports upon the delivery of each annual lot. For developmental contracts, the contractor typically files CCDR reports after major events such as first flight or completion of prototype lot fabrication, before major milestones, and upon contract completion. In general, quarterly or annual reporting requirements do not meet the above guidance.

11.3.2.2. Cost Performance Report (CPR)

The program manager should obtain a CPR (DD Form 2734/1, 2734/2, 2734/3, 2734/4, and 2734/5) on all contracts that meet or exceed the Earned Value Management System (EVMS) dollar thresholds and therefore require compliance with EVMS guidelines. The CPR provides contract cost and schedule performance for program management. It also provides early indications of both contract cost and schedule problems and the effect of implemented management actions to resolve such problems. Program managers should use DID DI-MGMT-81466 to obtain the CPR. The following guidance applies:

- Flexibly-priced (e.g., fixed-price incentive or cost-type) contracts that do not require compliance with EVMS guidelines, but for which the DoD Components require more data than is available on the C/SSR may require CPRs. CPR formats, level of detail, frequency, and variance analysis is limited to the minimum necessary for effective management control.

- Firm Fixed Price contracts do not require CPRs unless unusual circumstances dictate cost and schedule visibility.
- Systems used for internal contractor management may summarize and report data for the CPR.
- The program manager should tailor the CPR to the minimum required data. The contracting officer and contractor should negotiate and specify all reporting provisions in the contract, including reporting frequency, variance analysis requirements, and the contract Work Breakdown Structure to report.
- The CPR should be the primary means of documenting the on-going communication between the contractor and the program manager to report cost and schedule trends to date, and to permit assessment of their likely effect on future performance on the contract.
- CPRs should be provided via electronic methods, such as electronic access to contractors' internal databases, or via Electronic Data Interchange using the American National Standards Institute Accredited Standards Committee X12 transaction set for Project Cost Reporting (839).

11.3.2.3. Cost/Schedule Status Report (C/SSR)

The Cost/Schedule Status Report (C/SSR) applies to contracts, subcontracts, other transaction agreements, or intra-Government work agreements below the dollar thresholds of Earned Value Management and over 12 months in duration, unless the program manager requires EVMS compliance. Use DFARS Clauses 252.242-7005 and 252.242-7006 to place C/SSR requirements in solicitations and contracts.

The program manager obtains a C/SSR (DD Form 2735) on contracts over 12 months in duration, when the Cost Performance Report does not apply. The C/SSR provides contract cost and schedule performance information for program management. The C/SSR has no specific application thresholds; however, the program manager should carefully evaluate application to contracts of less than \$6.3 million (FY 2000 constant dollars). The program manager should require only the minimum information necessary for effective management control. Firm Fixed Price contracts should not require the C/SSR unless unusual circumstances dictate cost and schedule visibility. Program managers use DID DI-MGMT-81467 to obtain the C/SSR.

C/SSRs should be provided via electronic methods, such as electronic access to contractors' internal databases, or via Electronic Data Interchange using the American National Standards Institute Accredited Standards Committee X12 transaction set for Project Cost Reporting (839).

11.3.2.4. Contract Funds Status Report (CFSR)

The program manager obtains a CFSR (DD Form 1586, "Contract Funds Status") on contracts over 6 months in duration. The CFSR provides the DoD Components with information to update and forecast contract funding requirements; to plan and decide on funding changes; to develop funding requirements and budget estimates in support of approved programs; and to determine funds in excess of contract needs and available to be deobligated. Program managers use DID DI-MGMT-81468 to obtain the CFSR.

The CFSR has no specific application thresholds; however, the program manager should carefully evaluate application to contracts of less than \$1.3 million (FY 2000 constant

dollars). The program manager should require only the minimum information necessary for effective management control. Firm Fixed Price contracts should not apply the CFSR unless unusual circumstances dictate specific funding visibility.

CFSRs should be provided via electronic methods, such as electronic access to contractors' internal databases, or via Electronic Data Interchange using the American National Standards Institute Accredited Standards Committee X12 transaction set for Project Cost Reporting (839).

11.3.3. Software Resources Data Report (SRDR)

SRDR is a recent initiative with a primary purpose to improve the ability of the Department of Defense to estimate the costs of software intensive programs. DoD Instruction 5000.2 requires that data be collected from software development efforts-with a projected value greater than \$25 million (FY 2002 dollars)-contained within major automated information systems (Acquisition Category IA) and major defense acquisition programs (Acquisition Category IC and Acquisition Category ID).

Data collected from applicable projects describe the type and size of the software development, and the schedule and labor resources needed for the development. There are three specific data items to be provided:

1. Initial Government Report (DD Form 2630-1), records the government program manager's estimate-at-completion for the project. This report is due 180 days prior to contract award, and is forwarded as part of the Cost Analysis Requirements Description.
2. The Initial Developer Report (DD Form 2630-2), records the initial estimates by the developer (i.e., contractor or government central design activity). This report is due 60 days after contract award.
3. The Final Developer Report (DD Form 2630-3), is used to report actual experience. This item is due within 60 days after final delivery.

For particularly small or large software developments, the program manager may choose to shorten or lengthen the submission deadlines, accordingly. Also, for projects with multiple releases, the program manager may elect to combine the SRDR reporting of incremental releases within a single contract, and provide SRDR data items for the overall project.

Further information is available in an on-line SRDR Manual. This manual provides additional background and technical details about the data collection. In particular, the manual contains information about the process by which each project defines, collects, and submits the data. The manual also contains sample data items, and provides suggested language to include in a request for proposal for this reporting requirement.

11.3.4. Integrated Baseline Reviews

Program managers and their technical staffs or Working-Level Integrated Product Team s should evaluate contract performance risks inherent in the contractor's planning baseline. This evaluation should be initiated within 6 months after contract award or intra-Government agreement is reached for all contracts requiring Earned Value Management Systems

(EVMS) or Cost/Schedule Status Report (C/SSR) compliance. See the Government-Industry Integrated Baseline Review Handbook for further assistance with these reviews. Chapter 4 includes a brief overview of this technical review.

11.3.5. Quality

Government Contract Quality Assurance (GCQA) determines if contractual requirements have been met prior to acceptance of supplies and services. The contractor is responsible for controlling product quality. Detailed guidance on when to require GCQA at source or destination is contained in the FAR, Part 46. In general, the Government's technical authority responsible for the quality of supplies and services procured may require GCQA, through the contracting officer. This includes requesting specific inspections and/or tests at the source when needed to ensure product safety or verify mission-critical characteristics or when the contractor is experiencing or exhibiting difficulty controlling product characteristics.

Defense Contract Management Agency (DCMA) quality assurance personnel conduct GCQA as identified in contract administration delegations to DCMA by the Contracting Officer. The responsible technical authority should ensure that appropriate product specifications, drawings, and inspection and test instructions, including critical characteristics, are available and/or identified for use by DCMA quality assurance specialists when GCQA is required at the source. GCQA at the source may include one or more of the following:

- **Product Examinations**--Examinations of product characteristics to ensure they meet contract requirements. Depending on the identified risks, the GCQA surveillance strategy might include various product examination techniques, such as inspecting, testing, witnessing, verifying by use of objective evidence, and analyzing Government or contractor performance data.
- **Process Reviews**--Reviews to determine the suitability, adequacy, and effectiveness of the process to achieve product outputs that meet contract requirements.
- **System Assessments/Audits**--Systematic, independent assessments and audits of the various elements of the contractual Quality Management System impacting process or product quality.

DCMA quality assurance specialists tailor GCQA to the product and contract requirements. To assure that appropriate source inspection is accomplished, the technical authority should prepare a Quality Assurance Letter of Instruction, through the contracting officer, to identify any critical product features/characteristics. This letter provides specific inspection/test instructions to the DCMA quality assurance representative.

GCQA at the destination is typically kind, count, and condition. This may involve preservation, packaging, and marking (if applicable). Additional inspections and/or tests for DoD Components other than DLA may be conducted as circumstances warrant. In these unusual cases, the technical authority should provide specific instructions through the contracting officer prior to acceptance.

11.4. Risk Management

The program manager and others in the acquisition process should take an active role in identifying and understanding program uncertainties, whether they have a negative or positive impact on the program baseline. An assessment of cost, schedule, or performance

against a program baseline is not credible or realistic if uncertainties are not recognized and in some manner incorporated into estimates and assessments in a transparent manner.

The impact of uncertainty in particular areas of the program, on particular estimates and assessments, should be analyzed and understood.

To obtain additional information related to Risk Management such as: various risk management processes, assessment techniques, handling methods, and monitoring tools, go to the Risk Management Community of Practice at the Acquisition Community Connection; or go to the Risk Management Guide for DoD Acquisition, Fifth Edition (Version 2.0) Defense Acquisition University.

11.5. Knowledge-Based Acquisition

Knowledge-based acquisition is a management approach which requires adequate knowledge at critical junctures (i.e., knowledge points) throughout the acquisition process to make informed decisions. DoD Directive 5000.1 calls for sufficient knowledge to reduce the risk associated with program initiation, system demonstration, and full-rate production. DoD Instruction 5000.2 provides a partial listing of the types of knowledge, based on demonstrated accomplishments, that enable accurate assessments of technology and design maturity and production readiness.

Implicit in this approach is the need to conduct the activities that capture relevant, product development knowledge. And that might mean additional time and dollars. However, knowledge provides the decision maker with higher degrees of certainty, and enables the program manager to deliver timely, affordable, quality products.

The following knowledge points and ensuing considerations coincide with decisions along the acquisition framework:

Program Initiation. Knowledge should indicate a match between the needed capability and available resources before a program starts. In this sense, *resources* is defined broadly, to include technology, time, and funding.

Considering the knowledge associated with technology, the knowledge should be based on demonstrated accomplishments. By requiring proven technology before a program starts, we reduce uncertainty. Rather than addressing technology development and product development, the program manager and Milestone Decision Authority can focus on product development, because they *know* the technology is available. DoD Instruction 5000.2 enforces this concept with the following policy:

Technology developed in S&T or procured from industry or other sources shall have been demonstrated in a relevant environment or, preferably, in an operational environment to be considered mature enough to use for product development in systems integration. Technology readiness assessments, and where necessary, independent assessments, shall be conducted. If technology is not mature, the DoD Component shall use alternative technology that is mature and that can meet the user's needs.

Design Readiness Review. Knowledge should indicate that the product can be built consistent with cost, schedule, and performance parameters. This means design stability

and the expectation of developing one or more workable prototypes or engineering development models. DoD Instruction 5000.2 lists the specific factors that contribute to such knowledge.

Production Commitment. Based on the demonstrated performance and reliability of prototypes or engineering development models, knowledge prior to the production commitment should indicate the product is producible and meets performance criteria. DoD Instruction 5000.2 lists some of the specific factors that contribute to such knowledge.

Full-Rate Production Decision. Based on the results of testing initial production articles and refining manufacturing processes and support activities, knowledge prior to committing to full-rate production should indicate the product is operationally capable; lethal and survivable; reliable; supportable; and producible within cost, schedule, and quality targets.

11.6. Implementing a Performance-Based Business Environment (PBBE)

A Performance-Based Business Environment relates the business considerations of the acquisition strategy to the Life-cycle considerations of Systems Engineering, Life-Cycle Logistics, and Human Systems Integration. The following considerations apply:

- As part of acquisition reform, the Military Departments and Defense Agencies reviewed all military specifications and standards, canceling unnecessary documents, replacing many with non-government standards, and rewriting others to state requirements in performance terms. In cases where they defined military-unique requirements that could not be restated in performance terms without jeopardizing safety, reliability, or performance, the military specifications and standards were retained.
- Today, the Department of Defense relies on more than 30,000 federal and industry standards, to include performance specifications, international standardization agreements, non-government standards, and commercial item descriptions, as well as defense specifications and standards. In October 2002, the Defense Standardization Executive approved a Joint Materiel Standards Roadmap, developed in response to a June 6, 2001, tasking from the Under Secretary of Defense (Acquisition, Technology, and Logistics). The roadmap defines a course of action to ensure that materiel standards used by the Department of Defense, both commercial and government, continue to support the warfighters' operational requirements for joint Service and coalition interoperability and dramatically reduce the logistics footprint, as articulated in the Force-centered Logistics Enterprise. The objective of the roadmap is to reduce the number of endorsed standards to those required to support these objectives and enable the development of an automated tool to assist Program Managers.
- Because of our success in transforming military specifications and standards and the way that we apply them on contracts, it is no longer required to obtain a waiver from the Milestone Decision Authority to cite military specifications or standards in solicitations and contracts. Elimination of the waiver requirement should not be perceived as a return to the "old way of doing business," where military specifications and standards were often routinely applied to contracts. Every program office should assess requirements and apply only those specifications and standards necessary to define essential needs and manage risk. Program Executive Officers, Program Managers, and others in the acquisition and technical communities should ensure appropriate use of specifications and standards in their programs.

- The Department of Defense will normally use performance specifications (i.e., DoD performance specifications, commercial item descriptions, and performance-based non-Government standards) when purchasing new systems, major modifications, upgrades to current systems, and commercial items for programs in all acquisition categories. The Department of Defense additionally will normally emphasize conversion to performance specifications for the re-procurement of existing systems where supported by a business case analysis; for programs in all acquisition categories.
- If performance specifications are not practicable, or if stating requirements in performance terms is not practicable because of essential interface or interoperability requirements, the Department of Defense may state its needs using prescriptive requirements (i.e. dimensions, materials, etc.).
- The most recent version of MIL-STD-882, DoD Standard Practice for System Safety, listed in the ASSIST database, should be used to manage a program's Environment, Safety, and Occupational Health (ESOH) risks.
- Military specifications and standards contained in contracts and product configuration technical data packages for re-procurement of items already in inventory should:
 - Be streamlined to remove non-value-added management, process, and oversight specifications and standards;
 - When justified as economically beneficial over the remaining product life cycle by a business case analysis, be converted to performance-based acquisition and form, fit, function, and interface specifications to support programs in on-going procurement, future re-procurement, and post-production support.
- The Director, Naval Nuclear Propulsion, determines the specifications and standards for naval nuclear propulsion plants in accordance with 42 U.S.C. 7158 and E.O. 12344.
- DoD Instruction 4120.24 and DoD 4120.24-M contain additional standardization guidance.

The program manager should structure a PBBE to accomplish the following:

- Convey product definition to industry in performance terms;
- Use systems engineering and management practices, including affordability, Integrated Product and Process Development, and support, to fully integrate total Life-cycle considerations;
- Emphasize past performance;
- Motivate process efficiency and effectiveness up and down the entire supplier base-primaries, subcontractors and vendors-through the use of contractor-chosen commercial products, practices, and processes;
- Encourage Life-cycle risk management versus risk avoidance;
- Simplify acquisition;
- Transfer acquisition tasks to industry where cost effective, risk-acceptable, and where commercial capabilities exist; and
- Use performance specifications or convert to performance specifications during reprocurement of systems, subsystems, components, spares, and services beyond the initial production contract award; and during post-production support to facilitate technology insertion and modernization of operational weapons systems.

Systems that benefit from a PBBE include highly interoperable systems, high-tech/high-cost systems, high return on investment systems, systems requiring a high degree of logistics

readiness and/or technology insertion opportunity, and/or systems with a high total ownership cost and/or a long predicted life.

11.7. Total Life Cycle Systems Management (TLCSM)

The TLCSM approach to major systems decision making is a way to account for some of the total ownership categories that are difficult to address. The TLCSM approach, which is principally a Program Manager responsibility, requires programs to base major decisions on system-wide analyses and the Lifecycle consequences of those decisions on system performance and affordability. Examples of these analyses are the business cases and cost estimates that support the acquisition (i.e., affordability assessments, analyses of alternatives, cost-performance trades, and iterative establishment of program cost goals). The refined, detailed, and discrete Lifecycle cost estimates used within the program office should support internal, program office decision making such as the evaluation of engineering changes or in competitive source selections.

11.8. Integrated Product and Process Development (IPPD)

IPPD is the DoD management technique that simultaneously integrates all essential acquisition activities through the use of multidisciplinary teams to optimize design, manufacturing, and supportability processes. One of the key IPPD tenets is multidisciplinary teamwork through Integrated Product Teams.

IPPD facilitates meeting cost and performance objectives from product concept through production, including field support. The 10 tenets of IPPD can be summarized into the following 5 principles:

- Customer Focus
- Concurrent Development of Products and Processes
- Early and Continuous Life-Cycle Planning
- Proactive Identification and Management of Risk
- Maximum Flexibility for Optimization and Use of Contractor Approaches

11.9. Technical Representatives at Contractor Facilities

Program managers should maximize the use of Defense Contract Management Agency (DCMA) personnel at contractor facilities. Program managers and DCMA Contract Management Offices should jointly develop and approve program support plans for all Acquisition Category I program contracts to ensure agreement on contract oversight needs and perspectives.

The program manager should only assign technical representatives to a contractor's facility as necessary, and as agreed to by the Director, DCMA. A Memorandum of Agreement should specify the duties of the technical representative and establish coordination and communication activities. Technical representatives shall not perform contract administration duties as outlined in Federal Acquisition Regulation (FAR) Section 42.302(a).

11.10. Contractor Councils

DCMA supports the formation of management, sector, and/or corporate councils by each prime contractor under DCMA cognizance that provide Acquisition Category I, Acquisition Category IA, or Acquisition Category II program support. These councils provide an interface with the Contract Management Office Commander; the Defense Contract Audit Agency Resident Auditor; representatives from all affected acquisition management activities (including program managers, Item Managers, and Standard Procurement System Component Team Leaders), or designated representatives for any of the above listed individuals. Acquisition managers or designees should support both council activities and council-sponsored Working-Level Integrated Product Teams. Acquisition managers should assist the councils and keep all the stakeholders informed about issues affecting multiple acquisition programs, work issues quickly, and elevate unresolved issues to appropriate levels for resolution. These councils may identify and propose acquisition process streamlining improvements. Acquisition managers should assist and encourage councils to coordinate and integrate program audit and review activity, support and promote civil-military integration initiatives, and accept contractor Standard Procurement System proposals and other ideas that reduce total ownership cost while meeting performance-based specifications.

The program office staff should interface with contractors' councils, keeping in mind that such councils are not Federal Advisory Committees under FACA. The staff may find that these councils strengthen the corporate relationship with the Department of Defense, provide an interface between company representatives and acquisition managers, communicate acquisition reform initiatives, or even resolve issues. In leading corporate endeavors, such as Standard Procurement System proposals, civil-military integration ideas, or other initiatives designed to achieve efficiencies for the company, these councils may ultimately produce savings for the Government.

11.11. Government Property in the Possession of Contractors (GPPC)

All program managers who own or use GPPC should emphasize reducing GPPC and prevent unnecessary additions of GPPC. The program manager should assign GPPC management authority within the program office, and identify needed actions, reviews, and reports. The management of all GPPC, special tooling, and special test equipment, and decisions about retention, disposition, and delivery requirements should be well informed and timely. Government property left with the contractor but not needed for performance of the contract should be stored under a funded storage agreement. GPPC no longer needed for current contract performance or future needs should be promptly disposed of or reutilized in accordance with applicable laws and regulations. The program manager should document decisions regarding GPPC in the contract file.

GPPC includes Government property that is not "owned" by the program manager, but is "used" on the program. Government property may only be furnished to contractors under the criteria, restriction, and documentation requirements addressed in FAR 45.3.

11.12. Integrated Digital Environment (IDE)

DoD policy requires the maximum use of digital operations throughout the system life cycle. The program IDE is part of the larger DoD IDE. It should keep pace with evolving automation technologies and provide ready access to anyone with a need-to-know, as determined by the program manager.

Program managers should establish a data management system within the IDE that allows every activity involved with the program to cost-effectively create, store, access, manipulate, and exchange digital data. This includes, at minimum, the data management needs of the system engineering process, modeling and simulation activities, test and evaluation strategy, support strategy, and other periodic reporting requirements.

Industry partners have been strongly encouraged to develop and implement IDE solutions that best meet the needs of their preferred business model. The program IDE should take maximum advantage of and have minimum impact on existing industry solutions. Solicitations should require IDE proposals to support system life cycle activities. Unless analysis verifies prohibitive cost or time delays, or a potential compromise of national security, new contracts should require the contractor to provide on-line access to programmatic and technical data. Contracts should give preference to on-line access (versus data exchange) through a contractor information service or existing IT infrastructure. While contracts should minimally specify the required functionality and data standards, the data formats of independent standards-setting organizations should take precedence. The issue of data formats and transaction sets should be independent of the method of access or delivery.

The program manager should use existing infrastructure (e.g., Internet or wireless LANs) when practicable.

The program manager should address the status and effectiveness of the IDE at milestone reviews and at other appropriate decision points and/or program reviews.

11.13. Simulation-Based Acquisition (SBA) and Modeling and Simulation (M&S)

SBA is the robust and interactive use of M&S throughout the product life cycle. The program manager should employ SBA and M&S during system design, test and evaluation, and modification and upgrade. The program manager should collaborate with operational users and consider industry inputs during SBA/M&S program planning. Planning should include the application, support, documentation, and reuse of M&S; and the integration of SBA/M&S across functional disciplines.

The following additional considerations are useful during SBA/M&S planning activities:

- Plan for SBA/M&S and make necessary investments early in the acquisition life cycle.
- Use verified, validated, and accredited models and simulations, and ensure credible applicability for each proposed use.
- Use data from system testing during development to validate the use of M&S.
- Use SBA/M&S to support efficient test planning, pre-test results prediction, and the validation of system interoperability; and supplement design qualification, actual T&E, manufacturing, and operational support;
- Involve the OTA in SBA/M&S planning to support both developmental test and operational test objectives.
- Have DIA review and validate threat-related elements.

11.14. Independent Expert Review of Software-Intensive Programs

The program manager for an Acquisition Category ID or IC program that requires software development to achieve the needed capability should convene an independent expert program review after Milestone B and prior to the system Critical Design Review. The program manager, or other acquisition official in the program chain of command up to the CAE, should also consider independent expert program reviews for Acquisition Category IA, II, and III programs. The independent expert review team should report review findings directly to the program manager.